

**DAVIE WATER AND ENVIRONMENTAL
ADVISORY BOARD
JUNE 17, 2003
5:30 P.M.**

1. ROLL CALL

The meeting was called to order at 5:42 p.m. Board members present were Vice-Chair Tom Green, Gary Gaffney, Jeffrey Harrod, Gail Ling and Don Zane. Also present were Utilities Director Daniel Colabella and Board Secretary Jenevia Edwards recording the meeting. Daniel Lavrich and Ronald Phillips were absent.

2. APPROVAL OF MINUTES: February 18, 2003

Mr. Gaffney made a motion, seconded by Mr. Harrod, to approve the minutes of February 18, 2003. In a voice vote, with Messrs. Lavrich and Phillips being absent, all voted in favor. **(Motion carried 5-0)**

3. PRESENTATION

3.1 Ion Exchange System – Karl Kennedy, P.E., Calvin, Giordano & Associates

Mr. Kennedy outlined the reasons for the installation of the ion exchange system. He discussed the contaminants which were present in drinking water after it had been disinfected with chlorine, as well as the blending of the water which would result in treated and untreated water.

Mr. Kennedy explained that disinfection-by-products were chemicals formed during the disinfection of water after the treatment process to remove the color. He added that the chlorine which was used for disinfection reacted with the organic matter in the water which was the color. Mr. Kennedy explained that the water came from the Everglades muck layer which was the reason for the "ice tea" color. He spoke of the promulgation of the Stage 1 and Stage 2 Disinfection-By-Product Rules, the formation of certain chemicals which the EPA considered harmful and how they were derived. Mr. Kennedy spoke of the different things and the amounts that caused disinfection-by-product adding that the most common water disinfectant used was chlorine.

Vice-Chair Green asked if the level of chlorine used was stronger near the plant or at the end of the line. Mr. Kennedy explained that the chlorine was stronger near the plant adding that the dissipation of the chlorine was quicker when the water had a high color. He commented that there was strict monitoring of the chlorine levels in order to keep residuals out of the water. Mr. Kennedy referred to sodium hypochloride another type of disinfectant, in liquid form, which was also used in the water treatment process, and compared it to chlorine which was in gaseous form. In referring to the difference between both components, he added that there were plans by the EPA to remove the gaseous chlorine from water treatment plants due to the danger that existed in the event of a terrorist attack. Mr. Colabella referred to the location of the System One water plant and indicated that there were plans to change the operation of the chlorination process at that plant. There was a lengthy discussion regarding the production of chlorine and sodium hypochloride with Mr. Kennedy explaining the process involved.

Mr. Kennedy cited chlorine dioxide, ozone and UV light as other options for disinfection, all of which were not as effective as chlorine. He commented that the Town was required to meet the Stage 1 disinfection-by-product Rule in December of this year which was passed in

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1998. He discussed the compliance date for ground water system which was traditionally safer than surface water. More monitoring was required of the ground water system and compliance

was based upon the annual running average. Mr. Kennedy discussed the Stage 2 disinfection-by-product Rule and highlighted the guidelines, the monitoring and tests that were necessary to meet this rule.

Mr. Zane inquired if there were plans for the State to step in and force people on wells to use public water. Mr. Kennedy responded negatively and explained the procedure that would require residents on wells to be "hooked up" to public water.

Mr. Kennedy cited lime softening as a method for removing the color from water which was practiced by most water treatment facilities in Florida, adding that this had been an effective treatment process until the EPA began regulating disinfection-by-products. A lengthy discussion ensued regarding past treatment process and the effect it had on water, and the changes being proposed by the EPA. Mr. Kennedy discussed enhanced coagulation, membrane softening, and reverse osmosis as some of the methods used for water treatment to remove color, explaining the process involved for each method. Vice-Chair Green asked if brackish water was being used from the Floridan Aquifer in Broward County. Mr. Kennedy responded affirmatively, and explained that the City of Hollywood had brackish water wells as well as three treatment processes at their site; namely, lime softening, membrane softening and reverse osmosis. He explained the brackish water process and the disadvantages when compared to some of the other processes for water treatment. In a brief exchange, Mr. Kennedy explained the life expectancy of a membrane system depending on treatment, the recovery rate, the replacement cost, which could be significant, and the benefits and shortfalls. There was a brief discussion concerning reject water, its disposal as well as the process involved in reverse osmosis.

Mr. Kennedy indicated that the economics of the technology for each process was unique; however, there were different reasons to chose a particular technology and planned capacity would help to determine the technology that was chosen for water treatment. He compared the cost of reverse osmosis, membrane softening, and lime softening indicating that reverse osmosis was the most costly. Mr. Kennedy indicated that the operation and maintenance cost for membrane plants were fairly high because of the extra care needed. He discussed ion exchange technology including the size of the tanks and the process involved, adding that the advantage to this process was that there was no need for change in infrastructure.

5. OLD BUSINESS

Mr. Zane referred to the report on drainage systems which should have been presented at the February 18th meeting by Town Engineer Larry Peters. Vice-Chair Green indicated that the Board still expected to have the report. Mr. Colabella indicated that he would follow-up on the issue.

6. NEW BUSINESS

Mr. Gaffney asked about the protocol with respect to how a neighborhood would go about getting "on line" and asked if a protocol could be created. Mr. Colabella indicated that an "on line" hook up was based on 65 percent of the neighborhood. He explained the procedures

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including a special assessment, adding that Council made the final decision based on what the residents in a neighborhood wanted. Mr. Colabella indicated that there were State Statutes

governing a special assessment. Mr. Gaffney asked that this information be provided to the Board at the next meeting.

Mr. Gaffney mentioned that Council was in the process of passing a number of ordinances concerning environmental issues. He expressed the opinion that all such ordinances should have been referred to the Board for discussion prior to the first reading stage. A lengthy discussion followed with the consensus that when staff was presented with an item by Council, the Board under whose purview the item falls should be contacted and the item discussed by the Board.

7. COMMENTS AND/OR SUGGESTIONS

Vice-Chair Green suggested that each Boardmember contact their appointing Councilmember to express their opinion. Mr. Gaffney reiterated that there should be a protocol for issues involving the Board, and that this should be placed on the agenda for the upcoming meeting [August 19, 2003] for further discussion.

8. ADJOURNMENT

There being no further business to discuss and no objections, the meeting adjourned at 6:45 p.m.

Date Approved

Chair/Board Member